WHAT IS CLAIMED IS:

1. A method of quality-improvement of a digitally-encoded video sequence, wherein the video sequence comprises information representing a sequence of encoded frames, each encoded frame comprising one or more encoded macroblocks, the method comprising:

determining one or more processing capabilities of a decoder that will decode the video sequence;

encoding macroblocks of a first image;

encoding macroblocks of subsequent images, wherein some macroblocks are skipped; and

increasing video quality as a function of a fraction of macroblocks that are skipped to take advantage of decoder processing capability that would otherwise be unused as a result of the skipped macroblocks.

2. The method of claim 1 wherein the step of determining one or more processing capabilities of a decoder comprises having prior knowledge of the decoder type

3. The method of claim 1 wherein the step of determining one or more processing capabilities of the decoder comprises receiving processing capability information from the decoder.

4. The method of claim 1 wherein the step of determining one or more processing capabilities of the decoder comprises determining the number of macroblocks that can be decoded in a given interval if all macroblocks are skipped.

5. The method of claim 4 wherein the step of increasing video quality comprises determining the maximum frame rate in accordance with the following expression:

$$MaxFrameRate = \frac{1}{\frac{N_{coded}}{MaxMBPS} + \frac{N_{skipped}}{MaxSKIPPED}}$$

where N_{coded} is the number of coded macroblocks per frame, $N_{skipped}$ is the number of skipped macroblocks per frame, MaxMBPS is the maximum number of macroblocks that can be decoded in a given interval, and MaxSKIPPED is the maximum number of macroblocks that can be decoded in a given interval if all macroblocks are skipped.

6. The method of claim 1 wherein the step of increasing video quality comprises increasing a video frame rate.

7. The method of claim 1 wherein the step of increasing video quality comprises increasing a video picture size.

8. The method of claim 1 wherein the step of increasing video quality further comprises increasing a video frame rate as a function of a computational cost of the decoder to decode various types of macroblocks.

9. The method of claim 1 wherein the step of increasing video quality further comprises increasing a video picture size as a function of a computational cost of the decoder to decode various types of macroblocks.

10. The method of claim 1 further comprising:

taking account of a number of coefficients included in the encoded macroblocks and a computational requirement of the decoder as a function of this number.

11. The method of claim 10 wherein the step of increasing video quality comprises increasing a video frame rate.

12. The method of claim 10 wherein the step of increasing video quality comprises increasing a video picture size.

13. The method of claim 10 wherein the step of increasing video quality further comprises increasing a video frame rate as a function of a computational cost of the decoder to decode various types of macroblocks.

14. The method of claim 10 wherein the step of increasing video quality further comprises increasing a video picture size as a function of a computational cost of the decoder to decode various types of macroblocks.

15. A video conferencing terminal adapted to produce encoded video including a sequence of encoded frames, each encoded frame comprising one or more encoded macroblocks, the video conferencing terminal comprising:

one or more image processing engines adapted to encode a video signal, wherein some macroblocks are skipped; and

a communication interface adapted to determine one or more processing capabilities of a decoder that will decode the encoded video and further adapted to increase video quality as a function of a fraction of macroblocks that are skipped to take advantage of decoder processing capability that would otherwise be unused as a result of the skipped macroblocks.

16. The video conferencing terminal of claim 15 wherein the processing capability of the decoder is determined as a function the number of macroblocks that can be decoded in a given interval if all macroblocks are skipped.

17. The video conferencing terminal of claim 16 wherein a maximum frame rate is determined in accordance with the following expression:

$$MaxFrameRate = \frac{1}{\frac{N_{coded}}{MaxMBPS} + \frac{N_{skipped}}{MaxSKIPPED}}$$

where N_{coded} is the number of coded macroblocks per frame, $N_{skipped}$ is the number of skipped macroblocks per frame, MaxMBPS is the maximum number of macroblocks that can be decoded in a given interval, and MaxSKIPPED is the maximum number of macroblocks that can be decoded in a given interval if all macroblocks are skipped.

18. The video conferencing terminal of claim 15 wherein video quality is increased by increasing a frame rate.

19. The video conferencing terminal of claim 15 wherein video quality is increased by increasing an picture size.

20. The video conferencing terminal of claim 18 wherein the frame rate is further determined as a function of a computational cost of the decoder to decode various types of macroblocks.

21. The video conferencing terminal of claim 19 wherein the picture size is further determined as a function of a computational cost of the decoder to decode various types of macroblocks.

22. A method of quality-improvement of a digitally-encoded video sequence, the method comprising:

determining one or more processing capabilities of a decoder that will decode the video sequence; and

increasing video quality as a function of an encoder model of decoder processing load to take advantage of decoder processing capability that would otherwise be unused.

23. The method of claim 22 wherein the step of determining one or more processing capabilities of a decoder comprises having prior knowledge of the decoder type.

24. The method of claim 22 wherein the step of determining one or more processing capabilities of the decoder comprises receiving processing capability information from the decoder.

25. The method of claim 22 wherein the step of increasing video quality comprises increasing a video frame rate.

26. The method of claim 22 wherein the step of increasing video quality comprises increasing a video picture size.

27. A video encoder for generating an encoded video sequence, comprising:

one or more image processing engines adapted to:

encode a video signal;

determine one or more processing capabilities of a decoder that will decode the encoded video sequence; and

increase video quality as a function of an encoder model of decoder processing load to take advantage of decoder processing capability that would otherwise be unused.

28. The video encoder of claim 27 wherein the processing capabilities of the decoder are determined as a function a number of macroblocks that can be decoded in a given interval if all macroblocks are skipped.

29. The video encoder of claim 28 wherein a maximum frame rate is determined in accordance with the following expression:

$$MaxFrameRate = \frac{1}{\frac{N_{coded}}{MaxMBPS} + \frac{N_{skipped}}{MaxSKIPPED}}$$

where N_{coded} is the number of coded macroblocks per frame, $N_{skipped}$ is the number of skipped macroblocks per frame, MaxMBPS is the maximum number of macroblocks that can be decoded in a given interval, and MaxSKIPPED is the maximum number of macroblocks that can be decoded in a given interval if all macroblocks are skipped.

30. The video encoder of claim 27 wherein video quality is increased by increasing a frame rate.

31. The video encoder of claim 27 wherein video quality is increased by increasing an picture size.

32. The video encoder of claim 30 wherein the frame rate is further determined as a function of a computational cost of the decoder to decode various types of macroblocks.

33. The video encoder of claim 31 wherein the picture size is further determined as a function of a computational cost of the decoder to decode various types of macroblocks.